**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, DC 20554**

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| In the Matter of | ) | |
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| Connect America Fund | ) | WC Docket No. 10-90 |
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| Universal Service Reform – Mobility Fund | ) | WT Docket No. 10-208 |
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**COMMENTS OF MOSAIK SOLUTIONS**

The Federal Communications Commission has taken significant steps to ensure that additional Universal Service Fund support for mobile broadband deployment is more targeted to unserved and underserved areas of the country.[1] A key component of the FCC's recent reforms is the processes for determining which areas the agency will deem eligible for Mobility Fund Phase II ("MF-II") support and for enabling interested stakeholders to challenge areas presumptively deemed ineligible for support.[2] Mosaik Solutions supports the FCC's efforts to make MF-II funding available as quickly as possible and offers a few targeted recommendations in response to the agency's latest public notice seeking comment on the challenge process.[3]

[1] *Connect America Fund, Universal Service Reform – Mobility Fund*, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 2152 ¶ 15 (2017) ("*Report and Order*" or "*Further Notice*").

[2] *See Connect America Fund, Universal Service Reform – Mobility Fund*, Order on Reconsideration and Second Report and Order, 32 FCC Rcd 6282 (2017) ("*MF-II Challenge Process Order*").

[3] *See Comment Sought on Mobility Fund Phase II Challenge Process Procedures and Technical Implementation*, Public Notice, WC Docket No. 10-90 & WT Docket No. 10-208, DA 17-1027 (rel. Oct. 18, 2017) ("*MF-II Challenge Process PN*").

### A. Only Testing That Accounts for Consumers' Diverse Handset Preferences Will Produce Accurate, Device-Based 4G LTE Coverage Data

The FCC seeks comment on the types of devices that may be used for speed tests.[4] Service providers with qualified 4G LTE coverage must identify at least three "readily available handset models appropriate for testing those providers' coverage."[5]

Consumers have a wide variety of options when shopping for a mobile device. The FCC acknowledged in its most recent Mobile Wireless Competition Report that "[t]here has been significant growth in the variety of networked devices over the past year, and there also have been improvements and innovations in device functionality across platforms and technologies."[6] The FCC noted that mobile network operators offer a variety of traditional handsets, smartphones, tablets and other devices made by different manufacturers and equipped with different operating systems.[7] AT&T and U.S. Cellular, among others, differentiated themselves in the marketplace last year by offering lower-cost smartphones to their consumers.[8]

The MF-II challenge process will only be successful if it accounts for the diverse portfolio of devices consumers are purchasing today. Not every mobile wireless user owns the latest, most expensive device available on the market. Many consumers for many different reasons choose to purchase (or lease) lower-cost LTE-capable devices. In particular, many Lifeline offerings that include mobile broadband internet access are bundled with lower-cost

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[4] *MF-II Challenge Process PN* ¶ 7-8.

[5] *Id.* ¶ 8.

[6] *See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Wireless*, Twentieth Report, WT Docket No. 17-69, FCC 17-126 ¶ 62 (rel. Sept. 27, 2017).

[7] *Id.* ¶ 62, n.206.

[8] *Id.* ¶ 64.

smartphones.[9] MVNOs similarly offer a broad array of devices that include both more expensive, newer-release smartphones and lower-cost options.[10]

The FCC can maximize the accuracy of the 4G LTE coverage data derived from the MF-II eligibility challenge process by better defining what qualifies as a "readily available handset model" under its testing procedures. Mosaik offers at least two suggestions for establishing appropriate parameters for this term of art.

First, to the extent the challenged carrier sells an Android device, a representative testing scenario would need to ensure that at least one of the three testing devices uses the Android operating system. iOS, the mobile operating system used by Apple devices, is a notoriously closed operating system.[11] Limiting device-based testing to iOS-run equipment will drastically reduce the amount of information that challenging parties may be able to collect. Moreover, Apple devices running iOS are typically more expensive than devices that use the Android operating system.[12] Forcing an interested stakeholder to procure iOS devices will increase challenge costs while limiting ancillary data collection and analysis options the challenger can benefit from. Challengers will be less likely to lodge coverage disputes if they are limited to using the most expensive devices to perform drive or application-based tests.

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[9] *See, e.g.*, enTouch Discounted Cell Phones and Lifeline Cell Phones, https://www.entouchwireless.com/phones (last visited Nov. 7, 2017).

[10] *See, e.g.*, Phones | Straight Talk, https://shop.straighttalk.com/shop/en/straighttalk/phones (last visited Nov. 7, 2017).

[11] *See, e.g.*, Rob Loggia, *Apple's closed ecosystem is threatening to derail the technological revolution*, INT'L BUS. TIMES, Jan. 8, 2016, http://www.ibtimes.co.uk/apples-closed-ecosystem-threatening-derail-technological-revolution-1535944 (last visited Nov. 7, 2017).

[12] The iPhone 7 Plus was the second most expensive flagship smartphone on the market, according to one recent report, beating out every other device except the Pixel XL (with which it tied) and the Samsung Galaxy S8+. *See* Emily Ferron, *2017 Smartphone Comparison Guide*, NEW ATLAS, May 7, 2017, https://newatlas.com/best-smartphones-specs-features-comparison-2017/49418/ (last visited Nov. 7, 2017).

Second, and relatedly, the FCC can reduce barriers to testing challenges by setting an upper limit on the per-device cost of a readily available handset model, regardless of operating system. As noted above, flagship Apple and Samsung devices can cost more than $750 dollars per device. Indeed, the recently released iPhone X retails for $999 for a 64 GB model, or $1,149 for a 256 GB model. Flagship devices from other original equipment manufacturers can approach similar price-points. The FCC can promote a robust, fully fledged challenge process by adopting parameters for device costs. As just one example, the FCC could require that carriers subject to an initial challenge distribute their "readily available handset models" evenly across their device portfolios' retail costs spectrum. Said another way, the FCC could require a challenged carrier to make at least one device available from the bottom third, middle third and upper third of its device portfolio based on retail price.

Finally, Mosaik would encourage the FCC to avoid any implicit bias in favor of (or against) any particular application-based testing or software-based drive testing platform. Entities submitting an initial challenge to an ineligible area should have the flexibility to select the testing platform that best meets its needs so long as the platform produces reliable testing data capable of certification. Mosaik encourages the FCC to clarify that the examples of drive testing software provided in the *MF-II Challenge Process PN* are just that—examples—and that the device(s) a challenged carrier makes available should support as many testing platforms as possible.[13] Participants would further benefit from FCC clarification that Ookla is not the default

[13] *See MF-II Challenge Process PN* ¶ 8. Further, Mosaik would note that Ookla, one of the example companies named by the FCC in the Public Notice, does not, to Mosaik's knowledge, manufacture comparable drive testing software to the other companies listed as examples. Like Mosaik's Sensorly solution and others in the market, Ookla's Speedtest Mobile is an application-based drive testing platform.

application-based platform, despite being the specifically named in the *MF-II Challenge Public Notice* (including appendices).

### B. Eligible Challengers Should be Able to Rely on Third-Party Vendors to Serve as their "Qualified Engineers" Under the Challenge Process

In the *MF-II Challenge Process Order*, the FCC requires a challenging party, as well as parties responding to challenges, to submit a certification with its speed test data provided by a "qualified engineer or official" under penalty of perjury.[14] The *MF-II Challenge Process PN* does not further define who may be included as a "qualified engineer." Allowing participating entities to use the services of outside, third-party vendors to certify their data will create a more accessible and robust challenge process.

Many smaller service providers will not have dedicated resources to commit to the MF-II challenge process. Resource availability and other business decisions may dictate that a provider wishing to issue or defend a challenge must hire a third-party vendor to conduct the analysis and certify the test data. The FCC previously afforded governmental entities similar relief, holding that "[f]or challengers that are governmental entities and do not have a qualified engineer available to certify, [the FCC] will allow certification by a government official authorized to act on behalf of the organization and with actual knowledge of the accuracy of the underlying data."[15] It would be unreasonable to deny smaller, private enterprises similar relief. The FCC can provide clarity to the challenge process by affirming (or reaffirming)[16] that participating

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[14] *MF-II Challenge Process Order* ¶¶ 49, 60.

[15] *Id.* ¶ 49, n.146.

[16] Mosaik would note that, at least on one occasion, the FCC has informally stated that a "qualified engineer" may include a third-party vendor. *See* FCC, MF-II Challenge Process Webinar (Nov. 1, 2017), https://www.fcc.gov/news-events/events/2017/11/mf-ii-challenge-process-webinar (last visited Nov. 7, 2017) (noting at 32:28 that a qualified engineer "could be an employee of the entity filing the challenge or could be with a third party . . . .").

entities may provide certifications from outside, third-party vendors so long as the certifying organization or individual has actual knowledge of the accuracy of the underlying data.

Mosaik welcomes the opportunity to work with the FCC to make modest adjustments and clarifications to its MF-II challenge process to ensure that the FCC receives robust, relevant and accurate data on 4G LTE network availability that accounts for American consumers' varying device choices.

Respectfully submitted,

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